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eyes to-day? Dr. Gray and Dr. Hooker have left many problems of distribution for us younger ones to puzzle over.

A look to the future shows us that many fossil treasures are in this retreat of the ice slowly coming to light again. To those already found we owe much that we know of the history of the tertiary period, but that history will surely be rendered more vivid if a few generations of note-taking botanists study on their own ground the rapidity with which vegetation follows the retreating glaciers, and learn the order of its march.

Alaska will give us object lessons, if we will but heed them, and no more interesting or accessible field presents itself to American botanists.

Leucobryum minus, Hampe.

Through the kindness of Mr. Carruthers and Mr. Gepp of the British Natural History Museum, I have been able to see the type of this species, which has been variously confounded with *L. albidum* (Brid.) Lindb. by European authors, including Braithwaite in his supplement to the British Moss-Flora, p. 295, and Limpricht in Rabenhorst's Kryptogamen Flora, iv., 421. Authentic specimens, compared with the type, were sent to Dr. Braithwaite, and he admits that all the synonymy on page 296 l. c., except the last line, should be omitted. Mr. Kern also kindly sent a specimen of his Lago Maggiore collection, mentioned by Limpricht, l. c., and this also proves to be not our *L. minus*, Hampe, but the species known as *L. albidum* (Brid.) Lindb. Hampe's specimen was collected in "lignis putridis, ad flume Savannah, Ga.," by Beyrich, and is the characteristic moss of our Southern States, distributed by Sullivant in his Musci Alleghaniensis, No. 169, as *Dicranum glaucum*, var. *albidum*, Brid. from Georgia, Alabama, and Louisiana; also by Austin in his Musci Appalachiani, 477, as "*L. vulgare*, var. *minus*, (*L. minus*, Hampe) from the Southern States, common;" but the reference to Sullivant Mosses U. S., page 24, is wrong, as Sullivant referred to the smaller of the Northern States species, which has been separated from *L. glaucum* (L.), and which is identical with the European specimens described by Braithwaite and Limpricht. Sullivant and Lesquereux are partly responsible

for some of the confusion into which we have fallen, for No. 98 Musci Bor. Am. is a mixed specimen, distributed as "*L. minus*, Hpe. Hab. in Ohio," but containing both *L. minus* and *L. albidum*. The specimens from Lancaster, Ohio, in Sullivant's own herbarium, however, are all the northern species agreeing with European specimens, and not *L. minus*, Hpe. Further confusion has been caused by Lesquereux and James' Manual, page 91, where *L. minus*, Hampe, is cited as a synonym of *L. minus*, Sulliv., which it is not, and the true *L. minus*, Hpe. is described as *L. sediforme*, Mueller. Again authentic specimens were sent to Dr. Carl Mueller and he says "*Leucobryum minus*, Hpe. tuum non est meam *L. sediforme*, Syn. Musc. differentiam inter speciem utramque perfecte descripsit. Huosque tantam insula Hispaniola accepi." That is, *L. sediforme* is not our Florida species.

Authentic specimens from Florida were also sent to William Mitten, who says in part "I have Drummond's 46, *D. glaucum* var. *albidum*, from New Orleans, and a small specimen from James, marked by him '*L. sediforme* ? Florida, Palmer,' and another small specimen from Florida collected by LeConte. All these have the short, wide, appressed foliage so evident in your specimen. I have also a scrap of Sullivant No. 77 *L. minus*, Hpe., Ohio, with longer, narrower, more spreading leaves." Acting on Dr. Mitten's suggestion I sent to Paris authentic specimens of *L. minus*, Hpe. in this case a portion of Austin's Musci Appalachiani, No. 477, for comparison with Michaux's type of *D. glaucum pumilum*, at the Jardin des Plantes. M. Franchet kindly sent me a fruiting plant, and Mr. A. F. Foerste made a series of measurements for me, which prove Michaux's specimens to be the same species as Hampe's *L. minus*.

Michaux in his Flora Bor. Am. ii. p. 297 (1803) says: "*Dicranum glaucum: pumilum*. *D. caulibus ramosis, densissima foliatione crassis, foliis glaucis, convexo-canaliculatis. sporangio subinclinato, oblongo-ovato; operculo gracilter subulato, subinflexo. Obs. Mea varietas humillima, foliis acuminatis. Hab. in Carolina.*" Now in view of the confused state of the name *L. minus*, both in America and in Europe, would it not be well to adopt Michaux's prior name for the plant of the Southern United States, and call it *L. pumilum* (Michx.), 1803, (*L.*

minus, Hpe.), 1839; and Bridel's name for the specimens from Ohio and the Northern United States (*L. minus*, Sull.), and call them *L. albidum* (Brid.) Lindb.? In order to be certain that Bridel's *D. albidum* is the same as the Ohio specimens in Sullivan's herbarium, I have asked Dr. W. G. Farlow to make the comparison for me at Berlin, and he has kindly consented to, and taken a portion of Sullivan's specimens for that purpose. I have not yet heard from him, but meanwhile this much is certain, that *L. minus*, Sulliv. of Lesquereux and James' Manual, p. 91, is not the same as *L. minus*, Hpe., and that the description of *L. sediforme* of the Manual is meant for specimens of the same Hampe's *L. minus*. What the European specimens shall be called, however, had better be determined by some one who has more ready access to the types than I. M. Bescherelle, to whom M. Franchet also referred the question, says, "J'ai etudie le Bryum glaucum minus forma pumilum de Michaux, et je n'y vois aucune difference avec le *Dicranum albidum*, Brid." But I doubt the correctness of this statement unless he has seen Bridel's type, for Bridel in his *Bryologia Universalis* i. 409, 1826, cites the following localities for *D. glaucum*, var. *albidum*, "Pennsylvania, Virginia, et Massachusetts unde D. Torrey misit." One of these specimens is preserved in the Torrey Herbarium, labelled "*Dicranum albidum*, No. 14, legit Schweinitz, Pennsylvania," and is identical with Sullivan's specimens from Ohio, having the leaves longer than *L. minus*, Hpe., apex more acuminate, hyaline border of the base narrower. The difference in the aspect of the two also is very marked, *L. minus*, Hpe. being shorter, denser, with more crowded leaves, which are more closely imbricated and erect, with incurved cucullate apex. The range also is different, *L. minus*, Hpe. not having been collected thus far north of Carolina, while *L. minus*, Sull. occurs throughout the Northern States, also running south into Louisiana.

I shall be pleased to receive and examine specimens of *Leucobryum* from any and all collectors.

ELIZABETH G. BRITTON.